

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17 Abstract of the Disclosure

18 An optical apparatus and method are provided for controlling the polarization of light.
19 An incoming beam is directed at a photonic crystal. The photonic crystal is designed to act as
20 a transmission quarter-waveplate or half-waveplate; as a reflection waveplate; or as a
21 polarizer. In addition, the photonic crystal may be designed to accomplish phase matching in
22 nonlinear optical mixing processes, as well as obtaining other selected effects upon incoming
23 beams having known polarizations.